Hazards of butterfly collecting — the Monarchs of Mexico, December 1990

After concluding some business in Mexico City, I began to organise a visit to the winter roosts of the Monarchs (*Danaus plexippus*) with some trepidation. Due to the influx of Xmas tourists a car proved almost impossible to get hold of. My advance information was patchy and contradictory. I was assured that if I survived the predations of the traffic police (said to collect twice their pittance of a salary in spurious fines) then I would fall prey to bands of marauders (do not resist was the general advice). Chances that I would return with either of my two cameras were not rated high. In addition, I would not be able to see the Monarchs because of cloud, but that was anyhow academic, since any meal out of a five star hotel in Mexico City would give me a case of Montezuma's revenge which would preclude my reaching the site. In fact, much better once again to see the excellent National Geographic film about the Monarchs.

I am, fortunately, quite used to this kind of talk and decided to go ahead, though still with some nervousness. After all, car hire for two days, no information on local hotels, no working knowledge of Spanish, etc, is a fairly hefty investment of risk, time, and resources. And suppose it were to be a disappointment — like the shock my wife received when she saw how tiny was the famous Little Mermaid in Copenhagen? Would it be worth it? Would I even be able to find the site?

From the little villages of Ocampo and Angangueo some rather atrocious roads wind up to the Monarch roost, but my little Mexican-built VW Beetle devoured them with the same pleasure as my old Beetle did the Lebanese roads longer ago than I care to think about. We were going up from 2,000 to about 3,000 metres and during an hour's drive saw but three Monarchs, despite the fact that it was a clear day which was warming up nicely.

Suddenly I was among the Monarchs. As the car drove up the last bit of road towards the forest, thousands of Monarchs cascaded down, their wings two thirds open, with hardly a movement. Where two rivulets joined a minor tornado of Monarchs danced exuberantly. This activity increased in density and intensity as I edged further towards the forest and parked my car. Monarchs were everywhere, smothering flowers, but especially coming to pools of water in vast numbers. This was it. I need not have worried. I had seen nothing yet.

As I entered the forest the tall pines (*Abies religiosa*) were festooned with basking Monarchs, their wings open, warming up for flight. Thousands were flying down the mountain towards the open land below, though they never move more than a few kilometres from the roost. The ground was littered with Monarchs still not warm enough to fly. But the real sight covers a swathe of pines perhaps 200 by 200 metres, a bit further up the mountain. Here, in denser forest where little light penetrates the closed canopy, are the real roosts, at an altitude of 2,800 - 3,100 metres. Every pine tree is covered in Monarchs, quite literally, to the extent that not a

green pine needle can be seen. From the air it would look like a very sick patch of pines in a sea of green. It has been estimated that the roost contains some 35 million butterflies; I make that about a thousand per square metre. It is quite mind-boggling!

As the day heats up and as the sun begins to penetrate the main roosts, the trees become increasingly orange, as many individuals open their wings to bask, eventually to fly off. The whirring of millions of wings is a constant background noise. When there is no sun the Monarchs cannot fly. Their roosts are chosen in an area where the ambient temperature ranges from 2 to 12 degrees centigrade; their dense clustering is a defence against those occasional days when there is frost, as well as to deter predators.

As usual, no defence is perfect. The forest floor is littered with Monarch bodies and wings. Two species of birds and a mouse have managed to adapt to the powerful alkaloids which deter most predators. However, the best estimate is that 90 percent of these winter visitors survive, and hail storms account for more of the mortality than predators do.

There are three main roosts, each with 30 - 40 million Monarchs, and nine or ten much smaller roosts. They are all under identical ecological conditions in an area of not much more than a hundred square kilometres, yet all Monarchs from the eastern USA and Canada reach these roosts.

During the walk down to the car in the late afternoon, the Monarchs were making their way back up. Stop for a moment in a ray of sunshine, and four or five will settle on your shirt to drink up that little bit of extra heat needed to get them safely back to their roosts.

The night is spent in a lovely little hotel ($12 for the night, and $3 for a three-course meal). Montezuma was not out to get me. The traffic police waved politely. I was ready to face the 48-hour journey back to Botswana, rather improbably touching Montreal, Madrid, London and Lusaka on the way. I need not have worried about the Monarchs. No matter how well you know them intellectually, no matter how many films you have seen, once you stand there, you stand in awe.—T.B. LARSEN, 358 Coldharbour Lane, London SW9 8PL.

Thera juniperata Thunberg in eastern Ireland.

On 27.x.1986, one of us (JKE) took an unfamiliar looking geometrid at Newbridge, Co. Kildare (Irish grid ref. N803142). Just over two years later, on the evening of 5.xi.1988, KGMB took a similar specimen at Stepaside, Co. Dublin (IGR O192242). Comparison with the illustrations in Skinner B. (1984. *Colour identification guide to moths of the British Isles*. Viking, Harmondsworth) indicates that both specimens are examples of *Thera juniperata juniperata* Thunberg. In Ireland *T. juniperata* has up to now only been reported from the Burren, Co. Clare and Connemara, Co. Galway (Baynes, E.S.A., 1964. *A revised catalogue of the Irish Macrolepidoptera* (Butterflies and Moths). E.W. Classey Ltd., Hampton,. Middlesex), but the form found in those areas is considered to be a distinct